PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

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Peace/Williston Fish and Wildlife Compensation Program Annual Report 2002/03

M.D. Wood and B.G. Blackman

June 2003

PWFWCP Report No. 275

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

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PEACE /WILLISTON FISH AND WILDLIFE COMPENSATION PROGRAM

ANNUAL REPORT 2002/03

STEERING COMMITTEE:

Uli Bergmann (BC Hydro) – Chair
Dave Cattanach (BC Hydro)
Ted Down (MWLAP)
John Metcalfe (MWLAP)

FISH TECHNICAL COMMITTEE

Ted Zimmerman (MWLAP)– Chair
Nick Baccante (MWLAP)
Alan Laidlaw (BC Hydro)
Cynthia Powell (BC Hydro)
Ken Ashley (MWLAP - Technical Advisor)

WILDLIFE TECHNICAL COMMITTEE

Alan Chan-McLeod (BC Hydro) - Chair
John Elliott (MWLAP)
Doug Heard (MWLAP)
Ed Hill (BC Hydro)

FISH BIOLOGISTS:

Brian Blackman (BC Hydro) - Senior Biologist
Dawn Cowie (BC Hydro)
Arne Langston (BC Hydro)
Randy Zemlak (BC Hydro)

WILDLIFE BIOLOGISTS:

Mari Wood (BC Hydro) - Senior Biologist
Fraser Corbould (BC Hydro)

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PROGRAM ADMINISTRATION

Membership on the Steering Committee (SC) remained the same this year, with Uli Bergmann serving her second year as chair. Membership on the Wildlife (WTC) and Fish (FTC) Technical Committees remained the same as the previous fiscal, with Alan Chan-McLeod (BCH) serving his second year as chair of the WTC, and Cindy Powell serving her second year as chair of the FTC.

Fish biologists Brian Blackman, Arne Langston, and Randy Zemlak, and wildlife biologists Mari Wood and Fraser Corbould, continued as full-time staff responsible for administering, managing, and conducting program projects and activities. Fish technician Dawn Cowie was hired on in August 2002 for a 2-year full-time temporary term.

Administrative activities included preparation of the 2001/02 Annual Report (Blackman and Wood 2002), tracking program expenditures, managing contracts, preparing quarterly reports on program activities, preparing performance review plans, and updating staff safety training. A number of consulting firms and contractors were employed to undertake work on a variety of projects.

PROGRAM PLANNING

The Fish Program held two in-person meetings and one conference call to discuss the current year's projects and finances, and prepare a budget for 2003/04 for submission to the SC. The Fish Program Technical Committee also held a meeting to discuss technical issues in May. The Wildlife Program held one in-person meeting in December to address the same tasks. All program biologists attended SC meetings in November and January; senior biologists from the Fish and Wildlife programs also attended the annual January SC meeting to present the 2003/04 budget to the SC. Informal meetings were held with individuals, consultants, and stakeholder representatives to discuss current and potential projects for the future.

PUBLIC CONSULTATION

Program Staff

Wildlife biologist Fraser Corbould presented a talk on fishers at a workshop that was addressing species at risk and biodiversity issues in the Prince George TSA. The PWFWCP donated a Live Sheep Capture excursion to the GOABC annual fundraiser auction in March, which raised $3,000 for GOABC.

Both Fish and Wildlife biologists made presentations to the Peace Water Use Planning group and Fish staff attended several meetings dealing with fish and foreshore development aspects of the Water Use Plan.

The PWFWCP and specific fish and wildlife projects were discussed through informal meetings and talks with industry representatives, club members, guide outfitters, trappers, contractors, students, tourists, and other government agencies. Detailed project information and technical reports were also discussed with, and disseminated to consultants, biologists, and researchers.

Program biologists also contributed to PWFWCP public consultation activities handled by BC Hydro's Public Affairs department (see below) including drafting and editing project articles for *Natureline* (the PWFWCP's official newsletter), and providing input to the development of the 2003/04 Public Consultation Plan.

BC Hydro Public Affairs

Advertisements for the PWFWCP were placed in the 2002/03 Freshwater Fishing Regulations Synopsis, and the Hunting and Trapping Regulations Synopsis. The 12th issue of *Natureline* was drafted. Program updates were distributed to stakeholders and letters were sent to stakeholders during special events. A contract was awarded to convert all program technical reports into digital PDF files for their eventual placement on the PWFWCP's website.

FISH PROGRAM

Brian Blackman

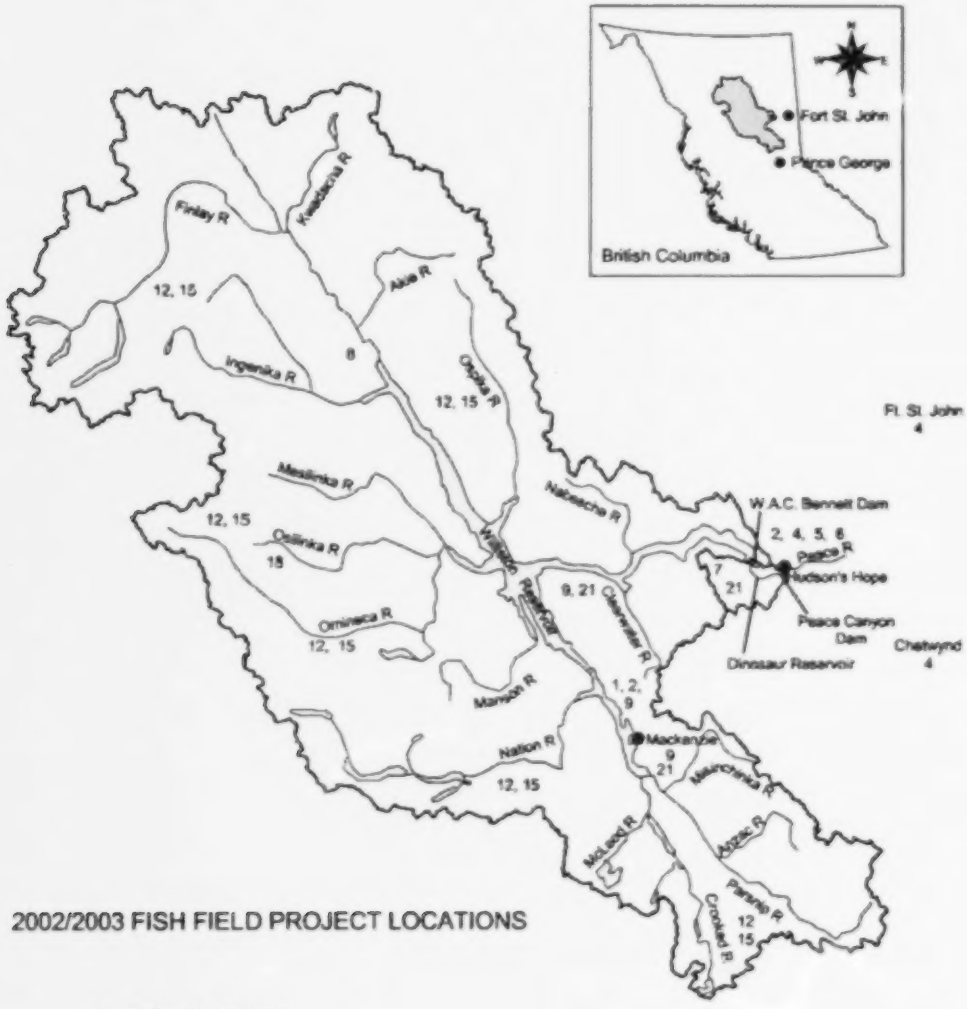
2002/2003 PROJECT LIST

Map	Task #	Project	Location
1	03-01	Project Maintenance	Parsnip
2	03-02	Stocking Program	Watershed
	03-03	Report Writing Previous Years	Office
4	03-04	Classroom Kokanee * (DFO)	Watershed
5	03-05	Dinosaur Reservoir Aquatic Plant Transplant	Dinosaur
6	03-06	Dinosaur Reservoir Woody Debris Additions	Dinosaur
7	03-07	Gething Bull Trout Evaluations	Dinosaur
8	03-08	Finlay Reach Bull Trout	Finlay
9	03-09	Small Lake Stocking Evaluations	Watershed
	03-10	Pygmy Whitefish Report Publication (UBC)	Office
11	03-11	Carbon Side Channel Evaluations and Recommendations	Peace
12	03-12	Kokanee Spawner Surveys	Watershed
	03-13	Extension	Office
		ENRENCHMENT FUND PROJECTS	
	03-14	Fish Resources Catalogue (UBC)	Office
15	03-15	Williston Reservoir Stream Temperature Monitoring (WSC)	Watershed
16	03-16	Reservoir Bathymetry Project (BCH)	Reservoir
	03-17	PWFWCP Fish Research Legacy Grant (UNBC)	UNBC
18	03-18	Osilinka Arctic grayling Distribution	Finlay
	03-19	Equipment from Entrenchment Fund	Watershed
	03-20	Lake Trout Synthesis (data summary)	Office
21	03-21	Small Lake Aerial Surveys	Peace / Parsnip
	03-22	Bull Trout Action Plan (WLAP)	Office
	03-23	Administrative Assistant	Office
	03-24	Arctic grayling Action Plan	Office

(Co-operative projects with:)

DFO Dept of Fisheries and Oceans, Habitat Conservation Trust Fund, Mackenzie Nature Observatory, Mackenzie Fish and Game Association, Canfor Ltd., BC Hydro office at the W.A.C. Bennett Dam
Lions club of Hudson's Hope and the Hudson's Hope Rod and Gun Club.
UBC University of British Columbia – part of this project was graduate student funded by PWFWCP
WLAP Ministry of Water Land and Air Protection - funded by PWFWCP
BC Fisheries - joint project funded by PWFWCP
UNBC University of Northern B.C.
WSC Water survey of Canada
FRBC Forest Renewal BC and Canfor
BCH B.C. Hydro

Peace / Williston Fish and Wildlife Compensation Program



2002/2003 FISH FIELD PROJECT LOCATIONS

1. Project Maintenance
2. Stocking Program
4. Classroom Kokanee
5. Dinosaur Reservoir Aquatic Plant Transplant
6. Dinosaur Reservoir Woody Debris Additions
7. Gething Bull Trout Evaluation
8. Finlay Reach Bull Trout Utilisation Surveys
9. Small Lake Stocking Evaluations
12. Kokanee Spawner Surveys
15. Williston Stream Temperature Monitoring
18. Osilinka Arctic Grayling Distribution
21. Small Lake Aerial Surveys

50 0 50 100 150 200 Kilometers

2

PROJECT SUMMARY

1. PROJECT MAINTENANCE (#02-01)

Objective: To provide maintenance of the Dina Creek and Dina Lake #3 inlet spawning habitat improvement projects and to monitor thermographs in tributaries of the Parsnip River.

2002/03 (Year 6 of ongoing): In Dina Creek the coarse fish barrier was adjusted, some debris was removed, and spawning gravel was added in preparation for the rainbow trout spawners. Access to the inlet stream of Dina Lake #3 was also improved. Project biologists assisted with the Dina Creek Field Day, where local students learn about stream ecology. Thermographs on the Parsnip River tributaries were maintained and the data placed in a stream temperature database. This project contributes to the Program Strategic Objectives by undertaking measurable projects which enhance the abundance of native fish. This project also encourages public involvement and increases recreational opportunities.

2. STOCKING PROGRAM (#02-02)

Objective: To provide funds to cover the costs, to B C Fisheries for the rearing and release of fish for PWFWCP projects.

2002/03 (Year 14 of ongoing): . Dinosaur Reservoir was stocked with 5,000 catchable (200g +) rainbow trout, which were fin clipped as part of an ongoing evaluation of stocking in the reservoir. In addition 7000 rainbow trout were released into three small lakes. This project meets the Program Strategic Objective of increasing recreational opportunities.

3. REPORT WRITING PREVIOUS YEARS (#02-03)

Objective: To provide staff time and funds for the completion and distributions of reports from previous years.

2002/03 (Year 5 of Ongoing): Reports completed this year include:

No. 261 Williston Reservoir fish assessments 2000, pelagic netting summary. R.A. Pillipow and A.R. Langston. March 2002. 12pp plus appendices.

No.262 Williston Reservoir stream access improvements - assessment protocol and mitigation options. Aquatic Resources Limited Report #444-2. April 2002. 20 pp plus appendices.

No. 263 Radio Telemetry Studies of Arctic Grayling Migrations to Overwinter, Spawning and Summer Feeding Areas in the Parsnip River Watershed 1996-1997. B.G. Blackman April 2002. 26 pp plus appendices.

No. 269 Fish stocking assessment of Lost Lake, 2002. R.J. Zemlak and D.M. Cowie. March 2003. 12pp plus appendices.

No. 272 Fish stocking assessment of Dina Lake #2, 2002. R.J. Zemlak and D.M. Cowie. May 2003. 15pp plus appendices

1997 Arctic grayling habitat utilization studies in the Table and Anzac Rivers has been completed and is under review. A final draft of the Development of a Premier Northern River Fishery: The Mesilinka River 1992-99, has been completed and is waiting final approval. Dinosaur Reservoir 2001 Fish Collection Summary has been completed and is awaiting Final Approval. The Arctic grayling Action Plan has been completed and is awaiting formatting revisions, however this has been put on hold awaiting the outcome of the Arctic grayling Recovery Plan. Report 2001, a comparative review; relative abundance of Arctic grayling (*Thymallus arcticus*) in the Parsnip, Table and Anzac Rivers, has been completed and reviewed final revisions are awaiting results if discussions at the spring technical session. This project meets the Program Strategic Objective of sharing information.

4. CLASSROOM KOKANEE (#02-04)

Objective: To assist with a program to raise kokanee in a classroom environment, as an educational tool, in Mackenzie(3 schools), Hudson's Hope, Chetwynd and Ft. St. John schools.

2002/03 (Year 7 of ongoing): This project was conducted in conjunction with the local School District, Department of Fisheries and Oceans, Habitat Conservation Trust Fund, Mackenzie Nature Observatory, Mackenzie Fish and Game Association, Canfor Ltd., BC Hydro office at the W.A.C. Bennett Dam, Lions Club of Hudson's Hope, and the Hudson's Hope Rod and Gun Club. In 2002, kokanee reared in classrooms the previous winter were released into local streams, art contest winners were selected and prizes awarded. Clearwater Trout Hatchery provided 50 kokanee eggs per school this year. The eggs were provided to the schools in Ft. St. John, Hudson's Hope, Chetwynd and Mackenzie. This project meets the Program Strategic Objective of encouraging the public to participate in program activities in increases public awareness of the program and general fisheries issues.

5. DINOSAUR RESERVOIR AQUATIC PLANT TRANSPLANT (#02-05)

Objective: To examine the potential of establishing aquatic plants in Dinosaur Reservoir. The establishment of aquatic plants should reduce entrainment problems, increase littoral productivity and benefit most fish species found in the reservoir. The year 2002 project was to test plant four species of emergents and several species of local submergent plants to determine the if aquatic vegetation can be established in Dinosaur Reservoir. In addition a detailed fish assessment was conducted to use as a baseline to measure the success for future enhancement activities.

2002/03 (Year 4 of 5): In 2002 Dinosaur Reservoir daily minimum water levels were nearly one meter higher than in 2001 during the month of June. As a result of this high water, at a critical time the plant survival from the previous year was generally very poor. However, sedges planted at the very highest elevations and in enclosures survived. No planting occurred this summer in the drawdown zone because of the elevated water levels. Protection of the plants from grazing appeared to be very important and should be considered when work of this type is conducted on Williston Reservoir. However, the problem of extremely limited exposure to daylight particularly in the spring months coupled with the potential for Dinosaur Reservoir to operate a slightly higher elevations in the future, makes continuation of this project futile. Submergent plans were moved from Trapping Lake to Johnson Bay in July. 2000 sedges were planted on two floating platforms in Johnson Bay and the remaining 4000 sedge plants were overwintered and will be donated to the BC

Hydro dust control program to use in experimental test planting in the drawdown zone of Williston Reservoir in 2003. Fish population assessments were carried out in July and October on Dinosaur Reservoir. These assessments were conducted to provide baseline data necessary to evaluate enhancement activities planned for Dinosaur in the future. Index electrofishing sites were established, and tagging recapture studies were carried out. A summary report on the planting and a first draft outlining the results of the fish assessment were completed and are under review. This project addresses the Program Strategic Objective of evaluating the status of fish stocks and undertaking applied research to develop tools to enhance fish populations and their habitat.

6. DINOSAUR RESERVOIR WOODY DEBRIS ADDITIONS (#02-06)

Objective: To place woody debris in one or more embayments to provide improved habitat for resident fish species.

2002/03 (Year 1 of 3): Woody debris was collected from around the reservoir and anchored in two embayments as the initial step in this pilot project. Different anchoring and attachment methods were used and will be evaluated in 2003. During the fish assessment (02-05) increased numbers of fish were not captured around the woody debris. However, this may simply be a result of the increased difficult in capturing fish out from the woody debris. More sites are planned for 2003 and a variety of techniques will be employed to provide better fish habitat in Dinosaur Reservoir. This project addresses the Program Strategic Objective of undertaking applied research to develop tools to enhance fish populations and their habitat.

7. GETHING BULL TROUT EVALUATION (#02-07)

Objective: To determine if a self sustaining population of bull trout has been created in Gething Creek and to recommend program activities for further evaluations.

2002/03 (Year 8 of 8): In 2002, a small number of three year old bull trout were captured. It remains to be seen if these fish will establish a resident population. Further evaluations are planed in a few years. This project meets the Program Strategic Objective of enhancing the abundance of native fish and evaluation of the success of projects.

8. BULL TROUT ABUNDANCE AND HABITAT SELECTION IN THE FINLAY REACH (#02-08)

Objective: Overall: (a) determine distribution and relative abundance of spawning adfluvial bull trout in Finlay reach tributaries and identify differential habitat selection strategies in watersheds exhibiting physiographical differences; (b) determine the relationship between spawning site selection, stream temperature and groundwater; (c) maintain a baseline dataset of stream temperatures and to index spawner densities. The 2002/03 objectives were to (i) continue to monitor index sites to assess relative spawning escapement, confirm use of suspected spawning areas: (ii) complete experiments on incubation success (eg. egg to fry survival, fry growth) in selected watersheds; (iii) contribute to development of Bull Trout Action Plan in cooperation with program Partners.

2002/03 (Year 5 of 5) In 2002 redd surveys were conducted on Davis River, temperature loggers were retrieved, the egg capsules were retrieved and the data included in C. Williamson's (UNBC grad student) thesis, which should be completed in 2003. In addition he made presentations on the findings of the research at an American Fisheries Society Conference. This project contributes to the Program Strategic Objective of contributing to the management of fish and their habitat.

9. SMALL LAKE STOCKING EVALUATIONS (#02-09)

Objective: Overall: To evaluate the fish populations in small lakes that PWFWCP are responsible for and insure the goals of the stocking program are met.
2002/03 Objectives: (a) evaluate the fish populations (native and introduced) of Bruce, Canty, Dina Lake #2 and Lost Lake, and to seek out enhancement opportunities in each system; (b) develop a small lakes stocking evaluation plan which will include evaluation schedules and recommendations for other types of assessments to insure the Programs objectives are being met effectively

2002/03 (Year 4 of ongoing) Evaluations were conducted on Bruce, Canty, Dina#2 and Lost lakes and the preliminary reports have been completed. A first draft of an evaluation plan is in progress. This project meets the Program Strategic Objective of increasing recreational opportunities and the evaluation of projects.

10. PYGMY WHITEFISH REPORT PUBLICATION (02-10)

Objective: To produce a journal report on the two year study of pygmy whitefish in Dina Lake.

2002/03 (Year 1 of 2) The report in consultation with Dr. Mc Phail is in Progress. This project meets the strategic objective of information sharing.

11. CARBON CR SIDE CHANNEL EVALUATION AND RECOMMENDATIONS (02-11)

Objective: To summarise the information on the Carbon Creek side channel project and recommend a course of action.

2002/03 (Year 1 of 1) A report was completed outlining the history and rational behind the options taken with this project. As well a list of recommendations were presented. This report was tabled by the Technical Committee as an example of a project evaluation template. This project meets the Program Strategic Objective of project evaluation .

12. KOKANEE STOCKING EVALUATION (02-12)

Objective: To evaluate the effectiveness of the kokanee stocking program which had the objectives of providing a variety of angling opportunities by establishing "self sustaining" and naturalised populations of kokanee.

2002/03 (Year 1 of 1) Spawner surveys were conducted on over 25 selected tributaries to Williston Reservoir to determine the kokanee spawner distribution and relative abundance. These surveys were repeated four times during the period from early September to late October in order to determine the temporal distribution of the spawners. Kokanee spawner numbers were estimated at 80,000 fish. This is a dramatic increase over surveys conducted in the 1990's, but it is suspected that these populations are in the process of colonizing watershed streams and that distributions and numbers will continue to change for at least the next decade. This project meets the Program Strategic Objective of increasing fish abundance, recreational opportunities and the evaluation of projects.

13. EXTENSION (02-13)

Objective: To provide staff time to provide information to agencies or groups to improve habitat protection of critical habitats.

2002/03 (Year 1 of continuing) Program staff provided input into the general Water Use Planning program as well as providing input to the fisheries and foreshore development committees. This project meets the Program Strategic Objective of sharing information.

02/03 STRATEGIC ENTRENCHMENT FUND PROJECTS

14 WILLISTON AND DINOSAUR WATERSHED FISHERIES RESOURCES CATALOGUE (#02-14)

Objective: To catalogue all available historical data on fish stocks from the Williston and Dinosaur watersheds and have it easily accessible through a user friendly P.C. Program.

2002/03 (Year 3 of 3) Progress has been made on this project this year, and the catalogue should be completed early in 2003. This project meets the Program Strategic Objective of sharing information.

15. WILLISTON WATERSHED STREAM TEMPERATURE MONITORING (#02-15)

Objective: To work in conjunction with Water Survey of Canada, BC Hydro and Environment Canada to have 10 temperature sensors added to the current hydrometric stations that exist on rivers entering Williston Reservoir.

2002/03 (Year 1 of ongoing) The temperature sensors were installed by Water Survey of Canada in the spring of 2002 and daily records are available at the Water Survey Website.. Several field trips have been undertaken to verify the accuracy of the readings. This project meets Program Strategic Objective of sharing information

16. WILLISTON RESERVOIR BATHYMETRIC MAP (#02-16)

Objective: To develop detailed contour maps of the drawdown / littoral zone of the reservoir to be used in the development of plans for work on the reservoir.

2002/03 (Year 1 of 1) This year was spent comparing cost estimates from the different technologies and potential products. Considerable time was also spent looking for partners to cost share this project with. BC Hydro vegetation management / dust control program has become a key partner in this project. They are providing matching funding and it is anticipated a 2m contour map will be produced for the Finlay Reach in 2003. This project meets the Program Strategic Objective of sharing information and contributing to the management of fish and their habitats.

17. UNBC Research Grant (#02-17)

Objective: To develop and agreement with the University of Northern British Columbia to provide funding on a yearly basis to a UNBC student to do research into a pertinent fisheries topic in the Program area.

2002/03 (Year 2 of 2) An agreement has been developed that addresses the requirements of all parties concerned. This document has been approved and will be signed early in 2003. This project meets the Program Strategic Objective of sharing information and encouraging partnerships.

18. Distribution of Grayling Fry and Identification of Critical Habitats in the Osilinka River (#02-18)

Objective: Overall: To determine the distribution and relative abundance of Arctic grayling fry in Williston Reservoir tributary streams. Survey were conducted in the Omineca in 2001, Osilinka 2002, and are planned for the Ingenika in 2003, Nation 2004 and Parsnip Tributaries 2005. 2002/03 Objectives: (1)To determine of the distribution and relative abundance Arctic grayling fry in the Osilinka River, (2) to map potential spawning areas for possible future study based on the distribution of 0+ grayling and to compare habitats used in the Osilinka with those described in the Table/Anzac study.

2002/03 (Year 1 of 1): 73 electrofishing sites covering 9400m of shoreline were conduced in the 136 km long Osilinka River. A total of 174 young of the year grayling fry were captured. All of these fry were captured from a 40 km long section of the river and 148 (85%) were found in isolated pools on gravel bars and in drying back and side channels. The section of the river where the fry were found was lower gradient with a high percentage of fine and gravel substrate and with numerous back and side channels. This appears to be consistent with grayling fry distribution through the watershed. The low number of fry captured also appears to be indicative of the low recruitment found in most watershed streams. High spring flows may have increased fry mortalities and potentially reduced distribution. The high percentage of fry found in isolated pools and drying back channels is also similar to other watershed streams. This type of habitat selection appears to be more prevalent in streams where forest harvesting has been extensive. The utilization of small isolated pools and small back channels reduces impacts from flooding but leaves fry very vulnerable to stranding if water levels drop during the summer. The low recruitment, and extreme vulnerability to spring flooding and high mortality through stranding in late summer is noted in the literature for many areas.
This project meets the Program Strategic Objective to evaluate the status of fish and their habitat.

19. Equipment From the Entrenchment Fund (#02-19)

Objective To purchase new equipment from the entrenchment fund

2002/03 (Year 2 of 3) Entrenchment fund monies were used primarily to equip the "Williston Ranger". A hydro lab was not purchased this year because we wish to further evaluate the programs requirements.

20. LAKE TROUT SYNTHESIS (#02-20)

Objective: To compile the known fish and habitat information on Lake trout populations in the Program Area.

2002/03 (Year 1 of 1) This project did not occur because of time constraints, but funds were carried over and the project will be conducted in 2003.

21. SMALL LAKE ANGLER AERIAL SURVEYS (#02-21)

Objective: Overall: To evaluate the fish populations in the small lakes that the PWFWCP are responsible for and ensure the goals of the stocking program are met. 2002/03 Objectives: To conduct aerial angler/boat counts on 14 small lakes within the Williston Watershed . These surveys will provide information on angler use which will justify and allow us to modify the stocking program.

2002/03 (Year 1 of 1): The surveys were conducted as planned, although costs were higher than anticipated. A report has been produced, and as a result of these surveys, Canty and Little Carbon lakes, which had no angler use, have been dropped from the stocking list. This project meets the Program Strategic Objective of evaluating project to insure the best use of funds.

22. BULL TROUT ACTION PLAN (# 02-22)

Objective: To develop a Bull Trout Action Plan that sets a framework to guide Program decision making and project selection.

2002/03 (Year 1 of 1): Funds were used to cover travel and workshop costs and to collate data sets. A report should be completed in 2003. This project addresses the Program Strategic Objective of evaluating the status of fish stocks

23. ADMINISTRATIVE ASSISTANT (#02-23)

Objective: To provide administrative assistance to the program biologists to reduce the administrative workload and free up their time to do biology.

2002/03 (Year 1 of 3) Unfortunately due to administrative difficulties we were unable to hire an administrative assistant.

24. ARCTIC GRAYLING ACTION PLAN (# 02-24)

Objective: To provide an action plan to identify data gaps, life history, distribution, status and interactions with other species as outline in the Fish Strategic Plan, and recommend future PWFWCP activities.

2002/03 (Year 2 of 2): The delivery of this project was changed from the original proposal. The Fish Technical Committee has developed a first draft based on information provided in a number of documents/plans developed by program staff for the management, restoration and enhancement of this species. It was intended that this new plan would act as a template for any additional species action plans. However, the action plan has been put on hold because of the recommendation by the Steering Committee to develop a "Recovery" plan that will be written in the same format as the "Provincial Species Recovery Plans"

and that will acceptable under the Federal Species at Risk Legislation. This project will address the Program Strategic Objective of evaluation of fish stocks and undertaking applied research to develop method to maintain or enhance fish populations.

FISH PROGRAM – FINANCIAL SUMMARY

The budget for 2002/03 was $603,528. Funds available for the Fish Program in 2002/03 were $600,875 and expenditures during the fiscal year totalled $604,169. Projects accounted for $360,847 or 60% of the expenditures and 50% of staff time. Administration costs were $144,541, (24%) which was slightly lower than budgeted because $42,000 in contingency costs were included in the original budget. Planning costs were $86,710 (14%) and Public Consultation costs were $12,071 or 2% of expenditures but an additional $11,054 from the base fund was used as well, which would bring the value up to 4% of the program. This year entrenchment fund projects costs were $117,267, significantly less than the $389,636 had been budgeted for. However, monies from several projects were carried over into 2003/04 when the projects are expected to be completed. In addition $35,110 was spent from entrenchment funds carried over from and accounted for from 2001.

Staff time commitments were 30% (269 days) for Administration, 20% (176 days) for Planning, 3% (30 days) Public Consultation and 47% (415 days) for Projects (including entrenchment fund projects).

Monies spent from the Entrenchment Fund to date include $171,480 in 00/01, $300,267 in 01/02 ($339,887 was spend but the base budget was $39,620 under spent) and $117,267 in 02/03 for a total of $589,014.

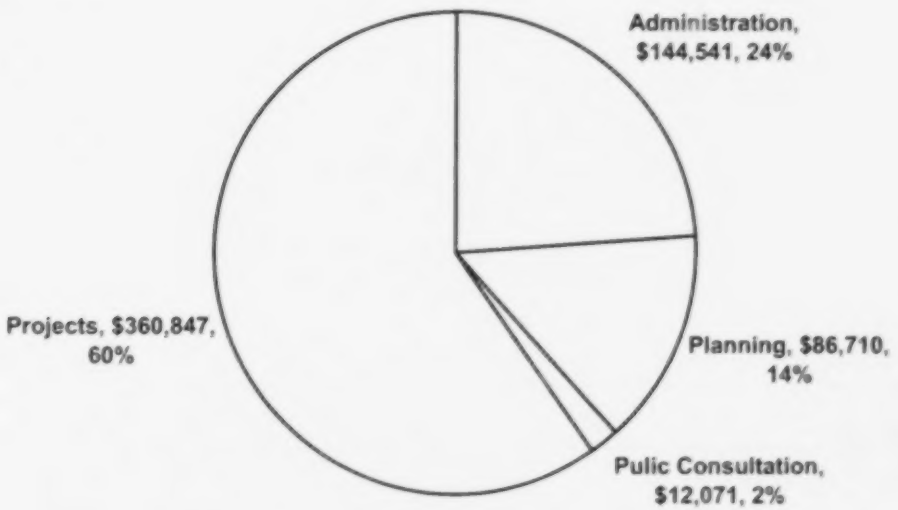


Figure 1. Fish Program expenditures for the 2002/03 fiscal year.
an additional $11,054 from the overall fund was spent on Public consultation which would bring this task up to 4%

Table 1. Detailed Fish Program budget expenditures for the 2002/2003 fiscal

COST CATEGORY	TASK	SPECIFIC PROJECT	PROJECT COSTS	TOTAL EXPENDED	% EXPENDED	% BUDGETED
Administration	Base 01		144541	$144,541	24%	* 26%
Planning	Base 02		86710	$86,710	14%	12%
Public Consultation	Base 03		12071	$12,071	2%	2%
Projects				$360,847	60%	59%
	02-01	Project Maintenance	7477	$7,477		
	02-02	Stocking Program	19299	$19,299		
	02-03	Report Writing Previous Years	20925	$20,925		
	02-04	Classroom Kokanee * (DFO)	10490	$10,490		
	02-05	Dinosaur Reservoir Aquatic Plant Transplant	49945	$49,945		
	02-06	Dinosaur Reservoir Woody Debris Additions	32837	$32,837		
	02-07	Gething Bull Trout Evaluations	5822	$5,822		
	02-08	Finlay Reach Bull Trout	68458	$68,458		
	02-09	Small Lake Stocking Evaluations	25891	$25,891		
	02-10	Pygmy Whitefish Report Publication (UBC)	652	$652		
	02-11	Carbon Side Channel Evaluations	799	$799		
	02-12	Kokanee Spawner Surveys	113168	$113,168		
	02-13	Extension	5084	$5,084		
		Total		$604,169		$603,528

Public Consultation included an additional $11,054 which came from the base fund. * administration included $41,965 contingency

Project Costs: includes operational costs, staff wages and travel, equipment & supplies, and vehicle costs.
Administration: includes staff wages, office rent, BCE administrative support, office supplies, vehicle costs.
Planning: includes staff wages & travel, Technical Committee travel, vehicle costs.
Public Consultation: includes staff wages & travel, vehicle costs, and BCH activities (Natureline etc. which comes from the base fund).

Entrenchment Fund Projects

COST CATEGORY	TASK	SPECIFIC PROJECT	PROJECT COSTS	TOTAL EXPENDED	BUDGETED
		Fish Resources Catalogue	636		
		Stream Temperature Monitoring	* 35110		
		Reservoir Bathymetry Project	879		
		PWFWCP Fish Research Legacy Grant	878		
		Osilinka Arctic grayling Distribution	55367		
		Equipment from Entrenchment Fund	16713		
		Lake Trout Synthesis (data summary)	0		
		Small Lake Aerial Surveys	28348		
		Bull Trout Action Plan	12956		
		Administrative Assistant	0		
		Arctic grayling Action Plan	1490		
			117267	$117,267	$389,636

* carry over project which was accounted for in 01/02

WILDLIFE PROGRAM

Mari D. Wood

2002/03 PROJECT LIST

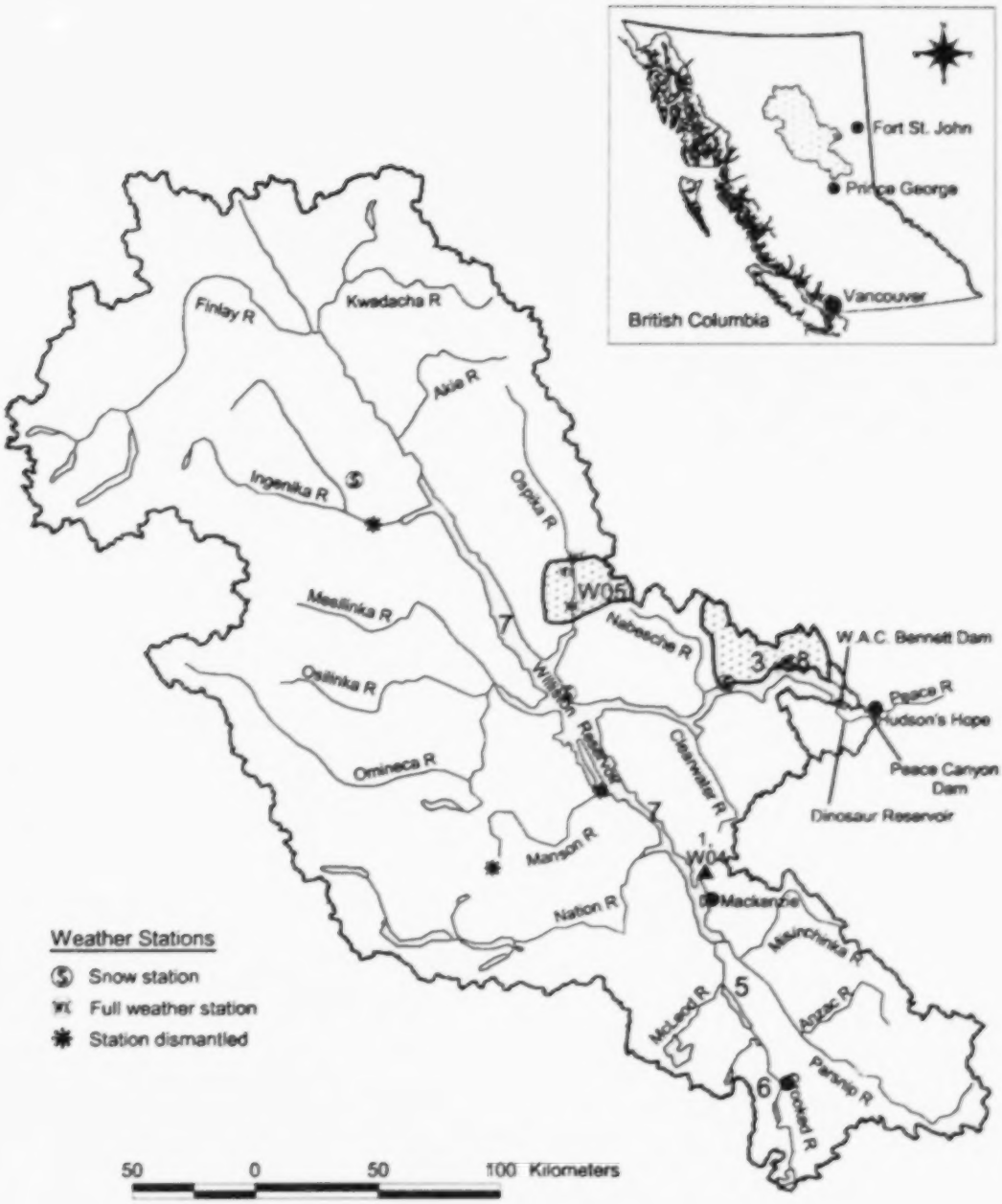
	PROJECT	TASK #	LOCATION
WILDLIFE BASE PROJECTS			
1	Mackenzie Migratory Songbird Monitoring (Co-op Project[1])	02-01	Parsnip
2	Weather Monitoring Stations	02-02	Watershed
3	20 Mile Point Stone's Sheep	02-03	Peace
4	Neonatal Ungulate Selection	02-04	Peace
5	McLeod Lake Grizzly Bear Behaviour	02-05	Parsnip
6	Cottonwood Tree Enhancement Trial	02-06	Parsnip
7	Osprey Inventory and Enhancement	02-07	Parsnip/Finlay
8	Peace Arm Prescribed Burn	02-08	Peace
9	Parsnip Weir Feasibility	02-09	Parsnip
10	Wildlife Extension	n/a	Office/Watershed
11	Data Analyses/Report Writing	n/a	Office
12	Fisher Habitat Use Project	n/a	Office
STRATEGIC ENTRENCHMENT FUND (SEF) PROJECTS			
13	Capital Expenditures	SEF-W02	Office
14	Mugaha Marsh Enhancement	SEF-W04	Parsnip
15	Ospika Goat/Mineral Lick Project	SEF-W05	Finlay

[1] "Co-operative Projects" are projects that are administered and conducted by other agencies, but funded by the PWFWCP.

Abbreviations used for Agencies/Clubs:

Agencies and clubs that are partners on PWFWCP projects are listed in brackets at the end of each project's objective. The following abbreviations are used -

ABIT: Abitibi Consolidated (Mackenzie)
CWS: Canadian Wildlife Service
DU: Ducks Unlimited
HCTF: Habitat Conservation Trust Fund
MNO: Mackenzie Nature Observatory
MOF: Ministry of Forests
MWLAP: Ministry of Water, Land & Air Protection
SG: Slocan Mackenzie Operations



PROJECT NAME & NUMBER

02-01	Mackenzie Migratory Bird Monitoring
02-02	Weather Monitoring Stations
02-03	20 Mile Point Stone's Sheep
02-05	McLeod Lake Grizzly Bear Behaviour
02-06	Cottonwood Tree Enhancement Trial
02-07	Osprey Inventory and Enhancement
02-08	Peace Arm Prescribed Burn
SEF-W04	Mugaha Marsh Enhancement
SEF-W05	Ospika Goat/Mineral Lick

PROJECT SUMMARIES

1. MACKENZIE MIGRATORY BIRD MONITORING (CO-OP PROJECT) (#02-01)

Project Objectives: To determine the population status and trends of neotropical migratory songbird populations in the northern Rocky Mountain Trench, and to identify those species that may be at risk from habitat loss and degradation. This is a long-term initiative of the Canadian Wildlife Service to monitor trends of songbird populations throughout North America, to which the PWFWCP contributes annual funding support. [CWS, MNO, PWFWCP, SG, ABIT]

2002/03 (Yr 8 of ongoing): The mist-nets and banding station at Mugaha Marsh were re-established, and a master bander was hired for the fall migration season. Volunteers from the MNO, other organizations, and the general public provided assistance on a full-time basis. Capture and banding took place between mid-July and mid-September. The PWFWCP once again provided funding support for this co-operative project.

2. WEATHER MONITORING STATIONS (#02-02)

Project Objectives: To obtain baseline snow depth and other weather data from various sites throughout the Williston Reservoir watershed that will supplement current projects (e.g., 20 Mile Point Stone's Sheep, Ospika Goat/Mineral Lick), and help assess site suitability for past and future enhancement projects. [PWFWCP]

2002/03 (Year 5 of ongoing): Winter data from 6 remote snow stations located throughout the watershed were downloaded in the spring. Two sites (Ospika upper and lower) were upgraded to full weather stations (e.g., rain gauge, wind sensors), as were 2 new sites (20 Mile and Ospika lower #2), to monitor weather conditions on a year-round basis. In summer, 3 snow stations (Ingenika, Squawfish, and Manson) were permanently dismantled and new snow stations were erected at Pelly Lake and Horetzky Point in preparation for fall set-up activities. In fall, the 4 full stations were checked to ensure they were functioning properly, and the 4 snow stations were activated.

3. 20 MILE POINT STONE'S SHEEP (#02-03)

Project Objectives: To define the winter tick infestation in Stone's sheep wintering at low elevation on 20 Mile Point, north side of the Peace Arm, including determination of the cause of the problem, and the extent to which it affects herd health and productivity. [PWFWCP, MWLAP Victoria]

2002/03 (Year 5 of 5): A contract to monitor the movements of 20 (18 female, 2 male) adult radio-collared Stone's sheep captured between 1999 and 2002 was awarded; aerial telemetry was conducted throughout the year, with a focus on range and habitat use during spring and fall. Seven adult ewe mortalities were investigated between April and June 2002. Carcasses were sent to University of Saskatoon for necropsy; causes of death were starvation (5), injuries from fall from cliff (1) and unknown (1). Production of lambs by collared ewes was monitored in June, and surveys to monitor lamb survival were conducted in August, December and March. Seven of the 14 collared sheep were re-captured and re-examined for winter tick loads in Mar/Apr 2003; tick loads were found to be minimal. Re-capture of low elevation sheep from 20 Mile Point and Branham Slide was conducted with the use of volunteers.

4. NEONATAL UNGULATE SELECTION (#02-04)

Objectives: To identify neonatal ungulate selection by wolves in the north Peace Arm multi-prey system. [PWFWCP]

2002/03 (Year 4 of 4): Scats collected from 2 dens located 00/01 were to be analysed in 02/03 to complete the project, however, a lack of neonatal Stone's sheep hair for identification and comparative purposes precluded completion of the analyses. Scat analyses will be conducted in 03/04, after neonatal sheep are captured for the new Peace Sheep Demographics project, and hair samples are obtained.

5. MCLEOD LAKE GRIZZLY BEAR BEHAVIOUR (#02-05)

Objectives: To classify the behaviour of individual grizzly bears (and by extension, the behaviour by age, sex, and reproductive status), into bears that become a threat to humans after closure of a landfill, and bears that do not. To assist with improving the decisions made by the Conservation Officer Service (COS) of when and which bears to remove from landfill sites, and which bears to ignore and let live. [PWFWCP, MWLAP].

2002/03 (Year 3 of 3): Year 3 marked the second year of data collection after closure of the McLeod Lake landfill in the winter of 00/01. Limited trapping occurred in the spring in an attempt to re-capture and re-fit previously tagged bears with new transmitters. Aerial monitoring of the movements and habitat use of up to 5 radio-tagged bears initially captured at the McLeod Lake landfill in 2000 continued between den emergence (April) and den entry (November/December). Visits to the old landfill site by radio-tagged bears were monitored by a remote radio-telemetry datalogger at the landfill. No bear mortalities occurred this year, although 3 bears experienced dropped collars or collar malfunctions. A final project report will be produced in 2004.

6. COTTONWOOD TREE ENHANCEMENT TRIAL (#02-06)

Objectives: To determine if access routes created through the outer sapwood of mature cottonwood trees will hasten the establishment of heartrot, and result in the creation of internal chambers that are useable by secondary cavity-using wildlife. [PWFWCP]

2002/03 (Year 1 of 2): Potential study sites were investigated, site (Redrocky Creek area) and trees were selected, and holes were drilled into 82 large-diameter cottonwood trees. Another 93 trees were marked to help assess tree retention rates. A summary report detailing the enhancement work conducted in fall 2002 was completed.

7. OSPREY INVENTORY AND ENHANCEMENT (#02-07)

Objectives: To monitor the population status and nesting habitat of ospreys nesting around the perimeter of the Williston and Dinosaur Reservoirs, and to identify, design, and implement enhancement projects for ospreys adjacent to the reservoir. [PWFWCP]

2002/03 (Year 1 of 1): April nest identification and June nest occupancy surveys were conducted. An additional survey was conducted in early September to assess the impact of full-pool reservoir water levels on nest sites. Data were entered and a draft report was prepared.

8. PEACE ARM PRESCRIBED BURN (#02-08)

Objectives: To enhance forage for ungulates (primarily elk) and bears, and to provide foraging and breeding habitat for many wildlife species that require early seral habitats. [PWFWCP, MWLAP, MOF]

2002/03 (Yr 1 of 1): This project was to be delivered by WLAP in Ft. St. John, but was deferred due to staffing constraints.

9. PARNSIP WEIR FEASBILITY (#02-09)

Objectives: To verify the feasibility of establishing a water control structure within the causeway that crosses the Parsnip Reach (Parsnip River) in order to stabilize upstream water levels for the benefit of water-associated wildlife and plants. [PWFWCP]

2002/03 (Year 1 of 1): A field inspection and an evaluation of structural requirements were conducted. Based on an assessment performed by Ducks Unlimited engineers, the project was cancelled due to a substantial and very costly water control structure being needed, and the extent to which wildlife would benefit.

10. WILDLIFE EXTENSION (#02-10)

Objectives: To provide data and expertise on wildlife management issues and planning processes in BC. [PWFWCP]

2002/03 (Ongoing): Input to various planning processes, wildlife management issues, and other wildlife research projects was provided throughout the year.

11. DATA ANALYSES/REPORT WRITING

Objectives: To analyse data and complete reports from previous fiscal projects. [PWFWCP]

2002/03 (Ongoing): The 1998 Nabesche Goat Survey report was completed in 02/03 (reports on *current* projects are discussed under applicable project summaries elsewhere in this document).

12. FISHER HABITAT USE PROJECT (CARRIED-OVER FROM 2001/02)

Project Objective: To obtain a better understanding of fisher ecology and population dynamics in the sub-boreal forests that will lead to the design and implementation of future enhancement and protection activities. [PWFWCP, FRBC, MWLAP, SG, ABIT]

2002/03 (Year 7 of 5): Work on the final 5-year project report was initiated, but the final report will not be completed until 2003/04 due to staffing constraints in 02/03.

2002/03 STRATEGIC ENTRENCHMENT FUND PROJECTS

13. CAPITAL EXPENDITURES (SEF-W02)

Objectives: To purchase field and office equipment that will enable staff to conduct activities more efficiently, provide greater latitude in project deliverables, and provide flexibility in project start-up. [PWFWCP]

2002/03 (Ongoing): Office and field equipment including LCD projector, remote data acquisition systems, and radio-telemetry equipment were purchased.

14. MUGAHA MARSH ENHANCEMENT (SEF-W04)

Objectives: To re-establish the vegetation community and structure originally present at Mugaha Marsh in order to benefit the ongoing bird monitoring program and enhance the area for early seral wildlife. [MNO, PWFWCP]

2002/03 (Year 1 of 1): This project was deferred to 2003/04 due to initial MNO enhancement work being delayed, and subsequent staffing constraints.

15. OSPIKA GOAT/MINERAL LICK STUDY (SEF-W05)

Objectives: To determine the impacts of different forest harvesting options on mountain goat behaviour related to low-elevation mineral licks and trails. [PWFWCP, SG]

2002/03 (Yr 2 of 6): Mountain Goat Management Team meetings were held to discuss study design and other project issues for the overall Ospika Goat Study. A joint Work Plan for the Ospika Goat Study was drafted by PWFWCP and Slocan-contracted Wildlife Infometrics. Four goat mortalities were investigated in spring 2002. The use of low elevation mineral licks by 18 radio-collared goats was monitored between May and November by remote telemetry stations and remote cameras placed at mineral licks and along access trails. Analysis of telemetry and camera data was initiated in February 2002; a progress report will be completed by fall 2003. PWFWCP assisted with the development of mountain goat habitat supply models through a series of workshops with Slocan and other MGMT members. The final Goat Habitat Supply Modeling Report was drafted by Slocan and PWFWCP biologists by the end of March.

WILDLIFE PROGRAM - FINANCIAL SUMMARY

The annual Wildlife Program budget in 2002/03 was $491,625 plus an additional $88,375 in carry-over funds from the 2001/02 fiscal, resulting in a fiscal budget totalling $580,000. An additional $57,000 was budgeted to cover Public Consultation expenditures for the entire program. Wildlife program expenditures in the 2002/03 fiscal year amounted to $396,658, 76% ($303,128) of which was spent on wildlife research, enhancement, and evaluation projects (Figure 2, Table 2). Significant under-expenditures on some budgeted projects and the deferral of other projects to 03/04 resulted in a cost savings of $189,800 which was carried over to the 2003/04 fiscal.

The Strategic Entrenchment Fund (SEF) budget for the Wildlife Program is $855,000. SEF expenditures to date include $257,256 in 2001/02, and $221,137 in 2002/03 (Table 3), leaving $376,607 remaining in the SEF fund for subsequent fiscal years.

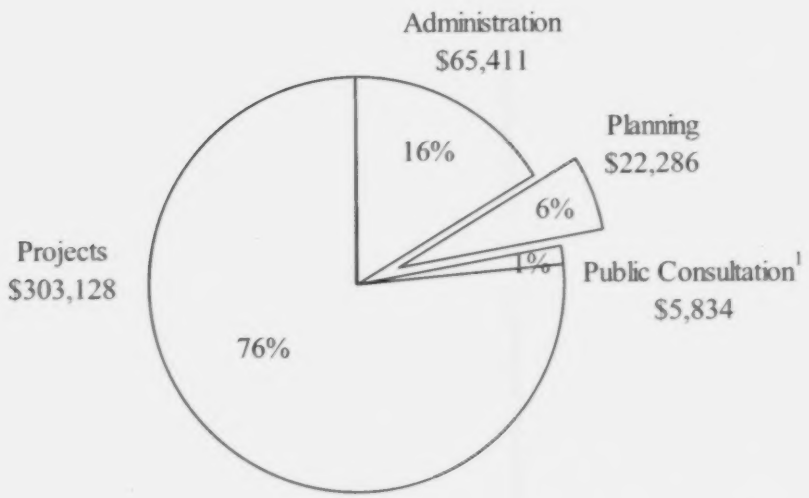


Figure 2. Wildlife Program expenditures in the 2002/03 fiscal year.

[1]Does not include additional $10,170 spent from separate Public Consultation Program budget delivered directly through BC Hydro.

Table 2. Detailed Wildlife Program budget expenditures for the 2002/03 fiscal.

COST CATEGORY	TASK #	SPECIFIC PROJECT	PROJECT COSTS[1]	TOTAL EXPENDED	% Expended	% Budgeted
Administration[2]	02-B1	Base Costs	65,411	65,411	16%	14%
Planning[3]	02-B2	Base Costs	22,286	22,286	6%	9%
Public Consult[4]	02-B3	Base Costs	16,004	5,834	1%	3%
Projects	02-01	Mackenzie Migratory Bird (Co-op)	8,263			
	02-02	Weather Monitoring Stations	36,855			
	02-03	20 Mile Point Stone's Sheep	67,081			
	02-04	Neonatal Ungulate Selection	1,762			
	02-05	McLeod Lake Grizzly Project	41,823			
	02-06	Cottonwood Tree Enhancement	25,805			
	02-07	Osprey Inventory and Enhancement	48,462			
	02-08	Peace Arm Prescribed Burn	155			
	02-09	Parsnip Weir Feasibility	4,541			
	02-10	Wildlife Extension[6]	5,887			
	n/a	Data Analyses/Report Writing[5]	4,823			
	n/a	Fisher Habitat Use Project	11,607			
	SEF	Strategic Entrenchment Fund Projects[7]	46,063	303,128	76%	74%
TOTAL				**$396,658**	**100%**	**100%**

[1] Project Costs: includes operational costs, staff wages and travel, equipment & supplies, and vehicle costs.
[2] Administration: includes staff wages, office rent, BCE administrative support, office supplies, vehicle costs.
[3] Planning: includes staff wages & travel, Technical Committee travel, vehicle costs.
[4] Public Consultation: includes operational costs, BCH wages, program staff wages & travel, vehicle costs
[5] Data Anaylses /Report Writing: includes consultant and staff wages for completion of previous project reports
[6] Wildlife Extension: includes staff wages for input to wildlife species and habitat protection/management activities and assistance on non-PWFWCP projects.
[7] Strategic Entrenchment Fund Projects: includes staff wages, travel, and vehicle costs associated with the Mugaha Marsh and Ospika Goat projects; Operational costs are reported separately under Table 3

Table 3. Strategic Entrenchment Fund (SEF) operational expenditures for the 2002/03 fiscal (hard costs only).

COST CATEGORY	TASK #	SPECIFIC PROJECT	PROJECT COSTS[1]	TOTAL EXPENDED	% Expended	% Budgeted
Planning	SEF-W02	Capital Expenditures	20,747	20,747	9%	
Projects	SEF-W04	Mugaha Marsh Enhancement	0			
	SEF-W05	Ospika Goat/Mineral Lick Study	200,390	200,390	91%	
TOTAL				**$221,137**	**100%**	**100%**

[1] Project Costs: hard costs only (see Table 2 for staff wages and travel, minor equipment & supplies, and vehicle costs associated with the delivery of SEF projects).